

## Plant Monitoring with a difference!

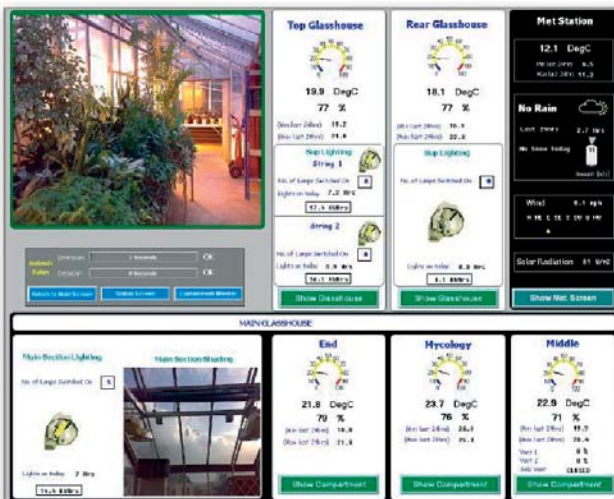
The School of Biological Sciences at Bristol University is internationally acknowledged for its leading edge teaching and research across a broad range of biological disciplines.

integrated with the current computer based control system.

According to Mr Tom Pitman of Bristol University, having used Orchestrator and

Datascan modules previously and knowing its powerful monitoring and trending capabilities, it was an obvious choice when upgrading the units glasshouse control systems. Another factor was that the Envirocons (used to control each compartments common environmental parameters) would merge seamlessly

into the Orchestrator program.

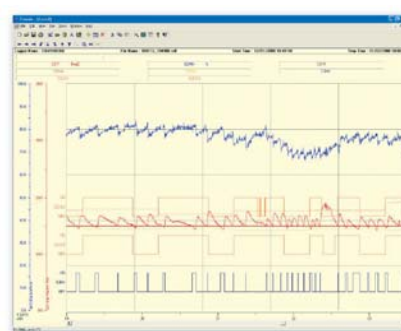


Graphic Display

In the top rank of UK biology departments it is dependant on the provision of well-equipped research facilities and specialist support units.

The School's glasshouse units produce a constant supply of high quality plant material, to strict deadlines, for teaching and research. The quality of the environment control systems play an important role in the production of this material.

To provide the backbone of the data logging and monitoring a Measurement Systems data acquisition system has been recently installed. Utilising a combination of the Datascan 7000 measurement modules and the Orchestrator SCADA software, the data acquisition system was seamlessly



Trend Display

The new system provides accurate and reliable data for a wide range of measurement requirements, such as recording temperature and relative humidity of the glasshouses and also weather data from an on site meteorological station.

### What's NEW

- Plant Monitoring with a difference!
- Ethernet Goes Industrial
- CAN-Bus converters and repeaters
- Low Cost GPS Receiver for Data Acquisition
- Wireless Modems/ Expansion Units
- Orchestrator Maintenance
- Website
- On-Site Datascan Calibration

By using the logged data along with Orchestrator's Trending and Data Export Facilities, historic data can now be retrieved at a later date by Students and academic research staff. The logged data can then be used when writing up environment conditions present while growing their plant material for University class practical's and research. This also helps replicate growing conditions of previously grown plant material.

The Orchestrator system replaced our previous PC software which only monitored two or three glasshouses, plus had very limited logging and trending capabilities. Since the installation, we are now able to monitor and log all 8 units, with possibilities for any future glasshouse expansion.

The distributed design of Datascan makes it easy to install and the mix and match capability provides a high degree of flexibility for different experiments. The system is easy to use and can be easily expanded in the future.

Datascan/Orchestrator systems can start as little as 8 channels and can be extended to as many as 1000 channels.



# CAN-Bus converters and repeaters

Controller Area Network (CAN or CAN-Bus) is a computer network protocol and bus standard designed to allow microcontrollers and devices to communicate with each other without a host computer.

CAN-Bus was originally developed in 1988 by Intel Corporation and Robert Bosch GmbH for automotive applications but is now also used in other areas.

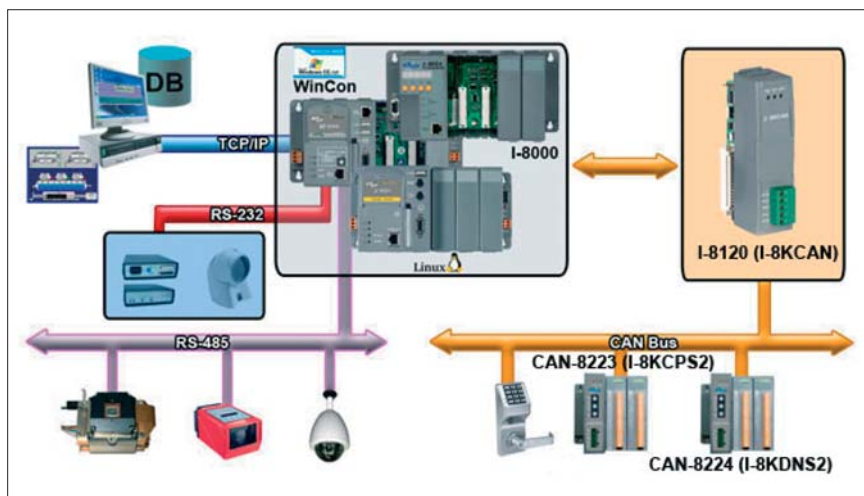
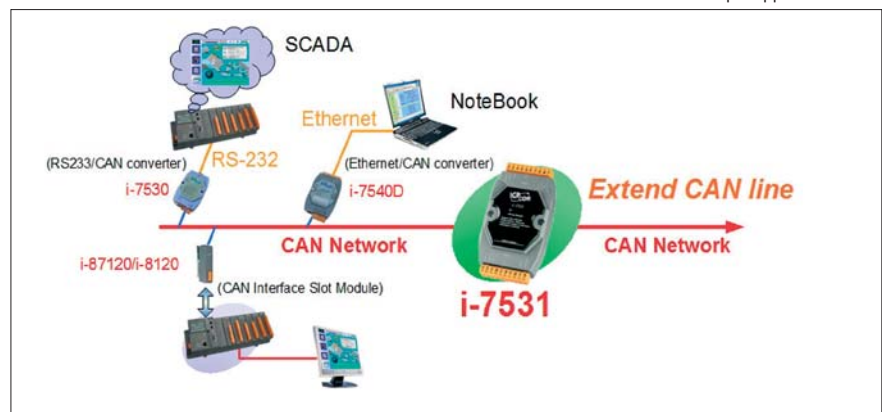
A modern automobile may have as many as 50 control units for various subsystems. Typically the biggest processor is the Engine Control Unit; others are used for transmission, airbags, antilock braking, cruise control, audio systems, windows, mirror adjustment, etc. Some of these form independent subsystems, but communications among others is essential. A subsystem may need to control actuators or receive feedback

CAN efficiently supports distributed real-time control with a very high level of security through its error process mechanisms and message priority concepts. These features can improve the network reliability and transmission efficiency.

The newly released range of CAN-Bus converters and repeaters provide a direct interface to CAN-Bus networks

- I-7531 which is a network extender which increases the length of the CAN network or it can be used to isolate different sections of the CAN Network.
- I-7565 which is a USB to CAN converter enabling communication directly with the CAN-Bus, via a USB port.

CAN Bus example application



CAN Bus example network using I-8000 Range products

from sensors. The CAN standard was devised to fill this need.

The CAN-Bus may be used in vehicles to connect engine control unit and transmission, or (on a different bus) to connect the door locks, climate control, seat control, etc. Today the CAN-Bus is also used as a fieldbus in general automation environments: this is especially because of the low costs of some CAN Controllers and processors.

particularly for environments where higher performance is required. This enables existing system and networks to be directly connected to CAN-Bus controllers and devices. The product range includes:

- I-7530 which is an RS232 to CAN converter enabling serial devices to communicate directly with the CAN-Bus.
- I-7540D which is a Ethernet to CAN converter enabling standard ethernet networks to be connected to CAN.

Also available are gateway modules for interfacing between CANopen or DeviceNet and Modbus or ICPDAS DCON Protocol. This enables Modbus or other Measurement Systems distributed products to be connected to these CAN based networks. Master or Slave devices are also available for the I-8000 Modular Data Acquisition Range thus offering a comprehensive solution for CAN-Bus requirements.

To aid in the configuration and testing of the CAN-Bus network, a set of software utilities is provided.

Applications where CAN-Bus is now used include:

- Factory automation
- Industrial machine control
- Maritime electronics
- Building management system
- Aircraft engines
- Automotive electronics

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## Low Cost GPS Receiver for Data Acquisition

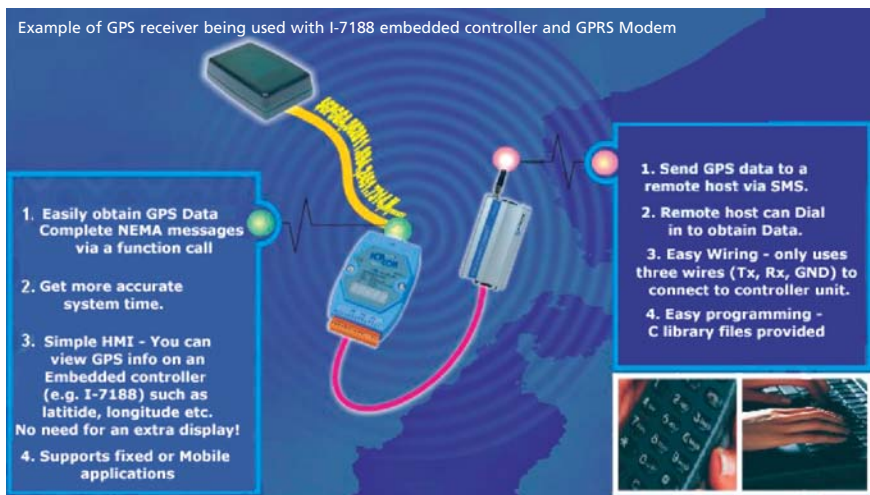
With a miniature form factor and available in both RS232 and USB versions, the UT-41R GPS Receiver module utilises 12-channel GPS technology and is designed for rapid start-up time and high performance in foliage and urban canyon environments.

The UT-41R applies the latest semiconductor technology so as to provide robust performance, enhanced position and velocity filtering for smooth navigation, onboard patch antenna and RS-232 driver for simple interfacing.



market where if combined with our Embedded Controller units, the location information can be transmitted or stored along with the more usual data such as temperatures, pressures etc. By using Radio or GPRS Technology, complete field data acquisition solutions can be developed.

Example of GPS receiver being used with I-7188 embedded controller and GPRS Modem



The UT-41R is optimised for applications requiring good performance, low cost and maximum flexibility. It is suitable for a wide range of applications including asset tracking and monitoring. Satellite-based augmentation systems (SBAS) such as EGNOS and WAAS are supported to yield improved accuracy.

This receiver supplies GPS data in standard NMEA format and has many applications in the Data Acquisition

## Website

For those of you not aware the new MSL website [www.measurementsystems.co.uk](http://www.measurementsystems.co.uk) now has buy online features providing an easy and convenient method of purchasing MSL's growing range of products. With the regular addition of new products please make sure you give us a visit.

## Orchestrator Maintenance



To ensure that your Orchestrator SCADA software is running at the latest version then please contact us to discuss an Orchestrator Maintenance Contract. Customers with current maintenance agreements are entitled to a copy free of charge and will be notified on release.

An Orchestrator Maintenance contract is highly recommended to ensure any questions that may occur can be dealt with quickly. While we always try to help, we do have to give priority to contract customers. Without a valid agreement, any support that requires investigation of any sort is likely to be chargeable. This can result in delays in response and possibly higher costs.

## On-Site Datascan Calibration

We are sure all customers will agree about the high level of reliability and stability of our Datascan Units. However over time the calibration will fall out of specification. We recommend returning the units at regular intervals (ideally annually) for re-calibration. For customers who are unable to return units due to time or cost constraints, we now offer an On-Site Calibration Service. For more information on this, please call us.

